IN THE CLAIMS:

1.-5. (Cancelled)

6. (Currently Amended) A superconducting ceramic ~~according to claim 5,~~ of the general formula $(A_{1-x}B_x)_yCu_zO_w{\cdot}(A_{1-x'}B'_{x'})_{y'}Cu_{z'}O_{w'}$

in which $0.1 < x < 1$

$0.1 < x' < 1$

$y = 2.5\text{-}3.5$,

$y' = 2.5\text{-}3.5$,

$z = 1.5\text{-}3.5$,

$z' = 1.5\text{-}3.5$,

$w = 6.0\text{-}8.0$,

$w' = 6.0\text{-}8.0$,

A is one rare earth element and

B and B' are two or more alkaline earth elements,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $YbBaSrCu_3O_{6\text{-}8}$.

7. (Cancel)

8. (Currently Amended) A superconducting ceramic ~~according to claim 5,~~ of the general formula $(A_{1-x}B_x)_yCu_zO_w{\cdot}(A_{1-x'}B'_{x'})_{y'}Cu_{z'}O_{w'}$

in which $0.1 < x < 1$

$0.1 < x' < 1$

y = 2.5-3.5,

y' = 2.5-3.5,

z = 1.5-3.5,

z' = 1.5-3.5,

w = 6.0-8.0,

w'= 6.0-8.0,

A is one rare earth element and

B and B' are two or more alkaline earth elements,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $YbBa_{0.7}Sr_{0.6}Ca_{0.6}Cu_3O_{6-8}$.

9. (Cancel)

10. (Currently Amended) A superconducting ceramic ~~according to claim 9,~~ of the general formula $(A_{1-x}B_x)_yCu_zO_w{\cdot}(A_{1-x'}B'_{x'})_{y'}Cu_{z'}O_{w'}$

in which $0.1 < x < 1$

$0.1 < x' < 1$

y = 2.5-3.5,

y' = 2.5-3.5,

z = 1.5-3.5,

z' = 1.5-3.5,

w = 6.0-8.0,

w'= 6.0-8.0,

A is more than one rare earth element and

B and B' are two or more alkaline earth elements,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $Y_{0.5}Yb_{0.5}BaSrCu_3O_{6-8}$.

11. (Currently Amended) A superconducting ceramic ~~according to claim 9,~~ of the general formula $(A_{1-x}B_x)_yCu_zO_w\cdot(A_{1-x'}B'_{x'})_{y'}Cu_{z'}O_{w'}$

in which $0.1 < x < 1$

$0.1 < x' < 1$

$y = 2.5\text{-}3.5$,

$y' = 2.5\text{-}3.5$,

$z = 1.5\text{-}3.5$,

$z' = 1.5\text{-}3.5$,

$w = 6.0\text{-}8.0$,

$w' = 6.0\text{-}8.0$,

A is more than one rare earth element and

B and B' are two or more alkaline earth elements,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $Y_{0.5}Yb_{0.5}BaCaCu_3O_{6-8}$.

12. (Currently Amended) A superconducting ceramic ~~according to claim 1~~ of the general formula $(A_{1-x}(B_{1-q}B'_q)_x)_yCu_zO_w$

in which $0.1 \leq x < 1$

$0.1 < q < 1$

y = 2.5-3.5,

z = 1.5-3.5,

w = 6.0-8.0,

A is one or more rare earth elements and B is more than one alkaline earth element when A is one rare earth element, A is a rare earth element and B and B' are different alkaline earth elements.

13. (Cancelled)

14. (Currently Amended) A superconducting ceramic ~~according to claim 1~~ of the general formula $(A_{1-p}A_{1-p}A'_p)_{1-x}(B_{1-q}B'_q)_x)_yCu_zO_w$

in which $0 < p < 1$

$0 < q < 1$

y = 2.5-3.5,

z = 1.5-3.5,

w = 6.0-8.0,

A and A' are different rare earth elements and

B and B' are different alkaline earth elements.

15.-17. (Cancelled)

18. (Currently Amended) A superconducting ceramic ~~according to claim 16,~~ of the general formula

in which $0.1 < x < 1$

$0 < p < 1$

z = 2.0-4.0

w = 4.0-10.0,

y = 2.5-3.5,

z = 1.5-3.5,

w = 6.0-8.0,

A and A' are different rare earth elements and

B is an alkaline earth element,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $Y_{0.5}Gd_{0.5}Ba_2Cu_3O_{6-8}$.

19. (Currently Amended) A superconducting ceramic ~~according to claim 16,~~ of the general formula

in which $0.1 < x < 1$

$0 < p < 1$

$z = 2.0\text{-}4.0$

w = 4.0-10.0,

y = 2.5-3.5,

z = 1.5-3.5,

w = 6.0-8.0,

A and A' are different rare earth elements and

B is an alkaline earth element,

wherein the superconducting ceramic has ~~having~~ the stoichiometric formula $Y_{0.5}Yb_{0.5}Ba_2Cu_3O_{6-8}$.

20. (Currently Amended) A method for producing a superconducting ceramic according to claim ~~16~~ 18, which comprises mixing together stoichiometric amounts of the oxides and/or carbonates of the constituent metals, in powder form, compressing the mixture to a shape and sintering the mixture at an elevated temperature.

21. (Cancelled)

22. (New) A method for producing a superconducting ceramic according to claim 19, which comprises mixing together stoichiometric amounts of the oxides and/or carbonates of the constituent metals, in powder form, compressing the mixture to a shape and sintering the mixture at an elevated temperature.

23. (New) A superconducting ceramic comprising rare earth atoms, alkaline earth atoms, copper atoms and oxygen atoms wherein said superconducting ceramic is formed in a layer structure a unit cell which includes two layers formed of a copper oxide and wherein a superconducting carrier flows along said two layers.

24. (New) The ceramic of claim 23 wherein said rare earth atoms are yttrium atoms.

25. (New) The ceramic of claim 23 wherein said alkaline earth atoms are barium atoms.

26. (New) The ceramic of claim 23 wherein said rare earth atoms are selected from among the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sc and Y.

27. (New) A superconducting ceramic comprising rare earth atoms, alkaline earth atoms, copper atoms and oxygen atoms, wherein said superconducting ceramic is formed in a layer structure a unit cell of which having two layers formed of a copper oxide, wherein a superconducting carrier flows along said two layers, and wherein the critical temperature of said ceramic being no lower than 70°K.

28. (New) The ceramic of claim 27 wherein said rare earth atoms are yttrium atoms.

29. (New) The ceramic of claim 27 wherein said alkaline earth atoms are barium atoms.

30. (New) The ceramic of claim 27 wherein said rare earth atoms are selected from among the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sc and Y.

31. (New) A superconducting ceramic comprising rare earth atoms, alkaline earth atoms, copper atoms and oxygen atoms, wherein said superconducting ceramic is formed in a layer structure a unit cell of which includes two layers formed of a copper oxide, wherein superconductivity results from electrons in a layer-like structure which is formed by the oxygen atoms surrounding each central copper atom.

32. (New) The ceramic of claim 31 wherein said rare earth atoms are yttrium atoms.

33. (New) The ceramic of claim 31 wherein said alkaline earth atoms are barium atoms.

34. (New) The ceramic of claim 31 wherein said rare earth atoms are selected from among the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sc and Y.

35. (New) A superconducting ceramic comprising rare earth atoms, alkaline earth atoms, copper atoms and oxygen atoms, wherein said superconducting ceramic is formed in a layer structure a unit cell of which includes two layers formed of a copper oxide, wherein superconductivity results from electrons in a layer-like structure which is formed by the oxygen atoms surrounding each central copper atom, wherein the critical temperature of said ceramic being no lower than 70°K.

36. (New) The ceramic of claim 35 wherein said rare earth atoms are yttrium atoms.

37. (New) The ceramic of claim 35 wherein said alkaline earth atoms are barium atoms.

38. (New) The ceramic of claim 35 wherein said rare earth atoms are selected from among the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sc and Y.